

AS1526, AS1527

10-Bit, Single Supply, Low-Power, 73kps A/D Converters

1 General Description

The AS1526/AS1527 are low-power, 10-bit, 73kps analog-to-digital (A/D) converters specifically designed for single-supply A/D applications. Superior AC characteristics, very low power consumption, and robust packaging make these ultra-small devices perfect for battery-powered analog-data collection devices.

The integrated successive-approximation register (SAR) and a fast (1.5µs) sampling track/hold time provide an economic and highly-reliable A/D conversion solution.

The AS1526/AS1527 operate from a single 2.7 to 3.6V supply. The AS1527 requires an external reference, using less power than the AS1526, however, the AS1526 features an internal 2.5V reference.

As with the AS1527, the AS1526 can also be used with an external reference, which uses the input range 0V to VREF, including the positive supply range.

The AS1527 consumes only 3mW (VDD = 3V) at the 73kps maximum sampling speed. Both devices feature a low-current (0.3µA) shutdown mode, which reduces power consumption at slower throughput rates.

Data accesses are made via the standard, high-speed 3-wire serial interface, which is SPI-, QSPI-, and Microwire-compatible. Both devices contain an internal clock, however, both devices also support an external clock for increased flexibility.

The AS1526/AS1527 are available in an 8-pin SOIC-150 package.

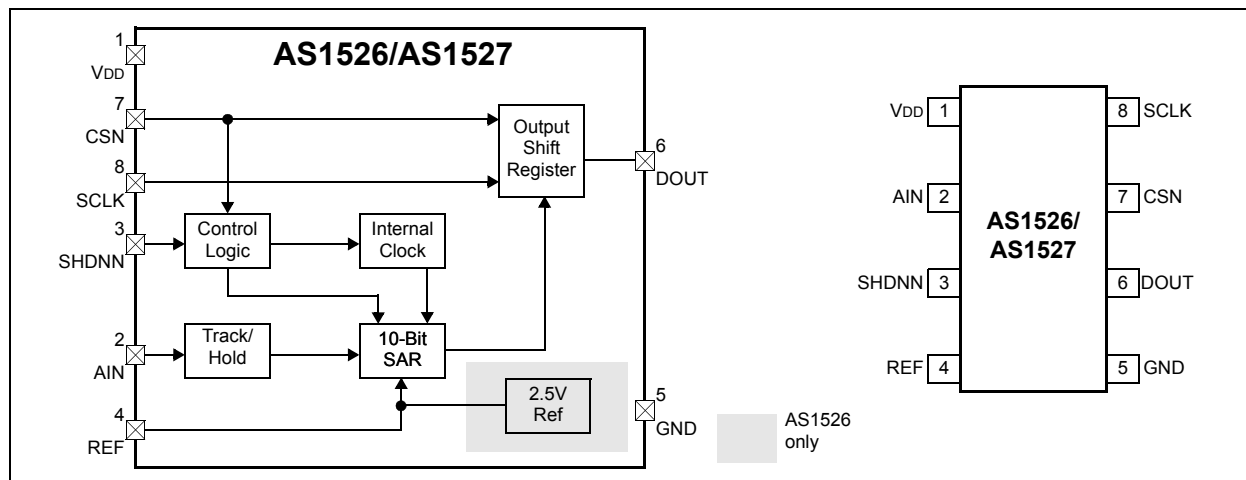
2 Key Features

- 10-Bit Resolution with 7.5µs Conversion Time
- Sampling Rate: 73kps
- Straight Binary (Unipolar) Data Format
- Single-Supply Operation: +2.7 to +3.6V
- Internal 2.5V Reference (AS1526)
- Low Power-Consumption:
 - 4mW (73kps, AS1526)
 - 3mW (73kps, AS1527)
 - 66µW (1kps, AS1527)
 - 1µW (Shutdown Mode)
- Integrated Track/Hold Amplifier
- Internal Clock
- SPI/QSPI/Microwire 3-Wire Serial Interface
- Operating Temperature Range: -40 to +85°C
- 8-pin SOIC-150 Package

3 Applications

The devices are ideal for remote sensors, data-acquisition, data logging devices, lab instruments, or for any other space-limited A/D devices with low power consumption and single-supply requirements.

Figure 1. Block Diagram and Pin Assignments



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